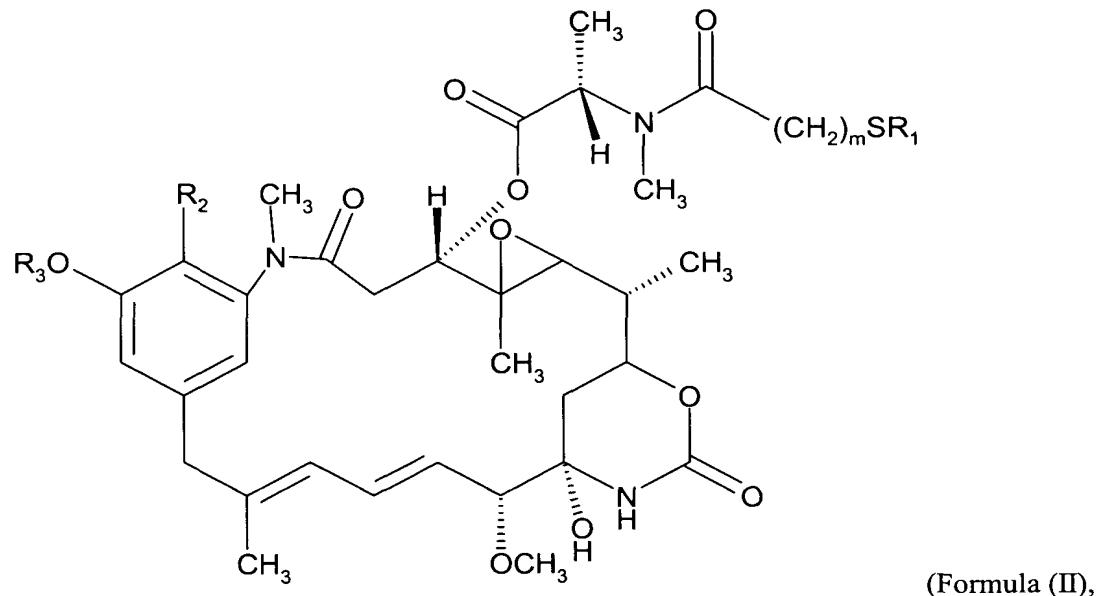


What is claimed is:

1. A compound of formula
A(LB)_n (Formula I),
5 wherein
 - A is an antibody molecule which is specific for CD44;
 - L is a linker moiety;
 - B is a compound which is toxic to cells; and
 - n is a decimal number with n = 1 to 10.
- 10 2. The compound of claim 1 wherein said linker moiety has a chemical bond capable of being cleaved inside a cell.
3. The compound of claim 2 wherein said chemical bond is a disulfide bond.
- 15 4. The compound of claim 3, wherein the antibody molecule is specific for the exon v6 of human CD44.
5. The compound of claim 4, wherein the antibody molecule is specific for an epitope 20 within the amino acid sequence SEQ ID NO:3.
6. The compound of claim 5, wherein the antibody molecule is the monoclonal antibody VFF-18 (DSM ACC2174) or a recombinant antibody having the complementary determining regions (CDRs) of VFF-18.
25
7. The compound of claim 6, wherein the antibody molecule comprises light chains having the amino acid sequence SEQ ID NO:4, or SEQ ID NO:8, and heavy chains having the amino acid sequence SEQ ID NO:6.
- 30 8. The compound of claim 7, wherein the toxic compound B is a maytansinoid.

9. The compound of claim 8 wherein the maytansinoid has the formula



5

wherein

R₁ represents H or SR₄, wherein R₄ represents methyl, ethyl, linear alkyl, branched alkyl, cyclic alkyl, simple or substituted aryl, or heterocyclic;

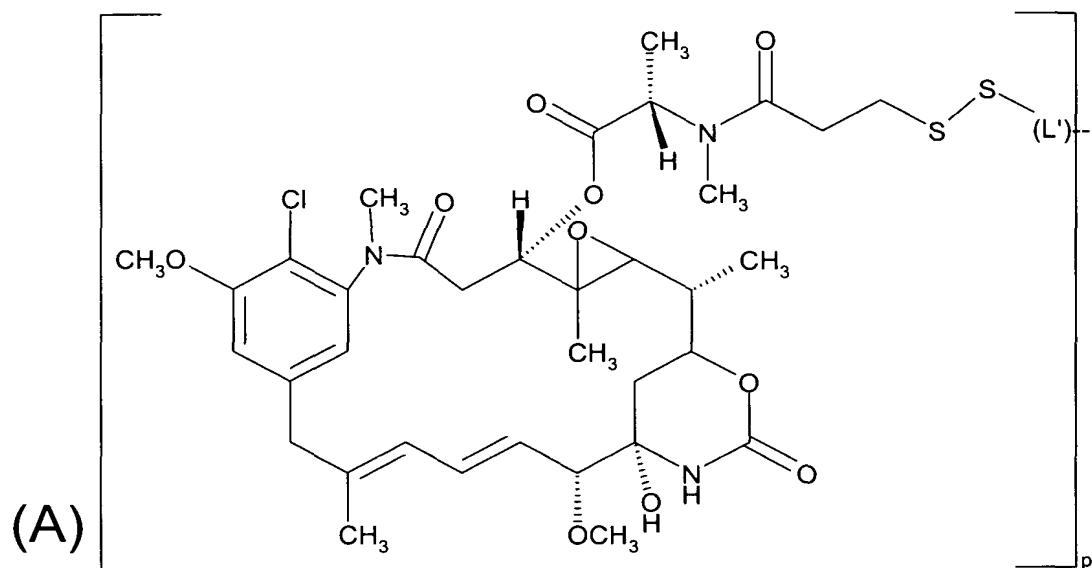
R₂ represents Cl or H;

10 R₃ represents H or CH₃; and

m represents 1, 2, or 3.

10. The compound of claim 9, wherein R₁ is H or CH₃, R₂ is Cl, R₃ is CH₃, and m = 2.

15 11. The compound of claim 10, wherein the compound A(LB)_n is of formula



(Formula III),

wherein

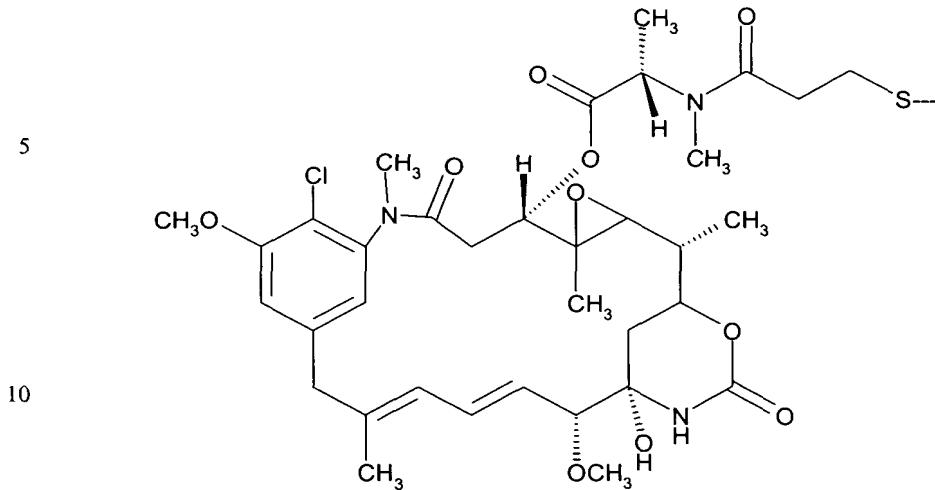
A is an antibody molecule which is specific for CD44,

(L') is an optional linker moiety

p is a decimal number with p = 1 to 10.

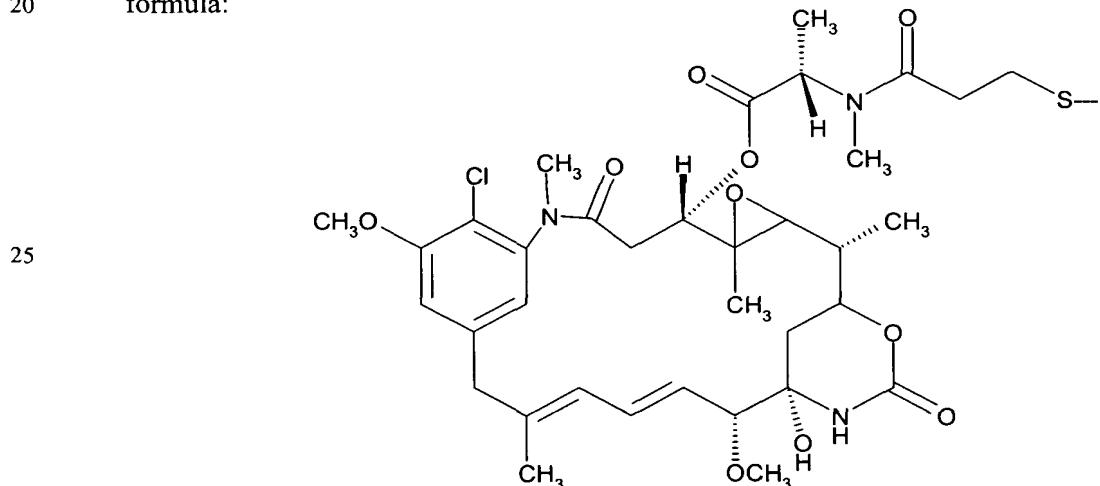
12. The compound of claim 11 wherein p = 3 to 4.
13. A composition comprising the compound of claim 1 and a chemotherapeutic agent.
- 5
14. The composition of claim 13, wherein the chemotherapeutic agent is a tubulin binding agent.
15. The composition of claim 13, wherein the chemotherapeutic agent is a microtubule stabilizing agent.
- 10
16. The composition of claim 13, wherein the chemotherapeutic agent is a taxane or an epothilone.

17. The composition of claim 13, wherein the chemotherapeutic agent is paclitaxel, docetaxel, RPR-116258A, epothilone A, B, C, D, E, or F, BMS-247550, or BMS-310705.
- 5 18. The composition of claim 13, wherein the chemotherapeutic agent is a microtubule destabilizing agent.
19. The composition of claim 13, wherein the chemotherapeutic agent is a vinca alkaloid.
- 10 20. The composition of claim 13, wherein the chemotherapeutic agent is vinblastine, vincristine, vinflunine, vindesine, navelbine, or vinorelbine.
21. A compound comprising a conjugate of a CD44v6 specific antibody molecule and a maytansinoid.
- 15 22. The compound of claim 21, wherein the antibody molecule is specific for an epitope within the amino acid sequence SEQ ID NO:3.
23. The compound of claim 22, wherein the antibody molecule is the monoclonal antibody VFF-18 (DSM ACC2174) or a recombinant antibody having the complementary determining regions (CDRs) of VFF-18.
- 20 24. The compound of claim 23, wherein the antibody molecule comprises light chains having the amino acid sequence SEQ ID NO:4, or SEQ ID NO:8, and heavy chains having the amino acid sequence SEQ ID NO:6.
- 25 25. The compound of claim 24, wherein the maytansinoid is linked to the antibody molecule by a disulfide moiety.
- 30 26. The compound of claim 25, wherein the maytansinoid has the formula:



Formula (IV).

15 27. A method for treating cancer comprising administering a compound comprising a conjugate of a CD44v6 specific antibody molecule and a maytansinoid, alone or in combination with a chemotherapeutic agent, wherein said antibody molecule comprises light chains having the amino acid sequence SEQ ID NO:4 and heavy chains having the amino acid sequence SEQ ID NO:6, and wherein the maytansinoid has the formula:



30 Formula (IV),
and is linked to the antibody through a disulfide bond.

28. The use of any one of claims 20 to 26, wherein one or more maytansinoid residues are linked to an antibody molecule.
- 5 29. The use of claim 27, wherein 3 to 4 maytansinoid residues are linked to an antibody molecule.
- 10 30. The use of any one of claims 20 to 28, wherein the maytansinoid is linked to the antibody molecule through a $-S-CH_2CH_2-CO-$, a $-S-CH_2CH_2CH_2CH_2-CO-$, or a $-S-CH(CH_3)CH_2CH_2-CO-$ group.
- 15 31. The use of any one of claims 20 to 29, wherein the chemotherapeutic agent is a tubulin binding agent.
- 20 32. The use of claims 30, wherein the chemotherapeutic agent is a microtubule stabilizing agent.
33. The use of claim 31, wherein the chemotherapeutic agent is a taxane or an epothilone.
- 25 34. The use of claim 32, wherein the chemotherapeutic agent is paclitaxel, docetaxel, RPR-116258A, BMS-247550, BMS- 310705, or epothilone A, B, C, D, E, or F.
35. The use of claim 30, wherein the chemotherapeutic agent is a microtubule destabilizing agent.
- 26 36. The use of claim 34, wherein the chemotherapeutic agent is a vinca alkaloid.
- 30 37. The use of claim 35, wherein the chemotherapeutic agent is vinblastine, vincristine, vindesine, vinflunine, navelbine, or vinorelbine.

38. The use of any one of claims 1 to 36, wherein the cancer is head and neck squamous cell carcinoma, esophagus squamous cell carcinoma, lung squamous cell carcinoma, skin squamous cell carcinoma, cervix squamous cell carcinoma, breast adenocarcinoma, lung adenocarcinoma, pancreas adenocarcinoma, colon adenocarcinoma, or stomach adenocarcinoma.

5

39. The use of any one of claims 1 to 37, wherein said compound **A(LB)_n** or conjugate, and said chemotherapeutic agent are formulated in separate pharmaceutical compositions.

10

40. The use of any one of claims 1 to 37, wherein said compound **A(LB)_n** or conjugate and said chemotherapeutic agent are formulated in one single pharmaceutical composition.

15

41. Method of treatment of cancer in a patient in need thereof, comprising administering to the patient a therapeutically effective amount of a compound **A(LB)_n** as defined in any one of claims 1 to 12, or a conjugate as defined in any one of claims 20 to 29, in combination with a chemotherapeutic agent as defined in any one of claims 13 to 19, or 30 to 36.

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42. The method of claim 40, wherein the cancer is head and neck squamous cell carcinoma, esophagus squamous cell carcinoma, lung squamous cell carcinoma, skin squamous cell carcinoma, cervix squamous cell carcinoma, breast adenocarcinoma, lung adenocarcinoma, pancreas adenocarcinoma, colon adenocarcinoma, or stomach adenocarcinoma.

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43. The method of claim 40 or 41, wherein the compound **A(LB)_n** or conjugate, and the chemotherapeutic agent are administered separately.

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44. The method of claim 40 or 41, wherein the compound **A(LB)_n** or conjugate, and the chemotherapeutic agent are administered as components of a single pharmaceutical composition.

45. Pharmaceutical composition comprising a compound **A(LB)_n** as defined in any one of claims or according to claims 1 to 12, or a conjugate as defined in any one of claims 20 to 29, together with a chemotherapeutic agent as defined in any one of claims 13 to 19, or 30 to 36, and optionally further comprising one or more pharmaceutically acceptable carrier(s), diluent(s), or excipient(s).

5

46. A kit comprising, in separate pharmaceutical compositions, a compound **A(LB)_n** as defined in any one of claims 1 to 12, or a conjugate as defined in any one of claims 20 to 29, and a chemotherapeutic agent as defined in any one of claims 13 to 19, or 30 to 36.

10

47. Use of a chemotherapeutic agent for the preparation of a pharmaceutical composition for the treatment of cancer, wherein said chemotherapeutic agent is used or is for use in combination with a compound of Formula **A(LB)_n** as defined in any of the preceding claims.

15

48. Use of a chemotherapeutic agent for the preparation of a pharmaceutical composition for the treatment of cancer, wherein said chemotherapeutic agent is used or is for use in combination with a conjugate as defined in any one of claims 20 to 29.

20

49. The composition of claim 13, wherein the chemotherapeutic agent is a taxane, an epothilone, a vinca alcaloid, a platinum compound, a camptothecin, a cryptophycin, a dolastatin, a 5,6-dihydroindolo[2,1-a]isoquinoline derivative, a spongistatin, an epipodophyllotoxin, an alkylating agent, an purine antagonist, a pyrimidine antagonist, or a DNA intercalator.

25

50. The composition of claim 13, wherin the chemotherapeutic agent is docetaxel, paclitaxel, RPR-116258A, epothilone A, B, C, D, E, or F, BMS-247550, BMS-310705, vinblastine, vindesine, vincristine, vinorelbine, vinflunine, navelbine, combretastatin A4-phosphate, hydroxphenastatin, AVE 8062, spongistatin 1, 2, 3, 4, 5, 6, 7, 8, or 9, E-7010, dolastatin, cemadotin hydrochloride, mivobulin isethionate,

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cryptophycin, camptothecin, topotecan, irinotecan, 9-aminocamptothecin, cisplatin, carboplatin, oxaliplatin, iproplatin, ormaplatin, tetraplatin, etoposide, teniposide, doxorubicin, daunorubicin, dactinomycin, plicamycin, mitomycin, bleomycin, idarubicin, cyclophosphamide, mechlorethamine, melphalan, chlorambucil, 5 procarbazine, dacarbazine, altretamine, carmustine, lomustine, semustine, methotrexate, mercaptopurine, thioguanine, fludarabine phosphate, cladribine, pentostatin, fluorouracil, capecitabine, cytarabine, or azacytidine.